

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Attorney Docket No. 3001DD-60369

In Re Application of:

**MARK A. TURNER**

Serial No.: 10/797,489

Filed: 10 MARCH 2004

For: **APPARATUS AND METHOD FOR  
ACTUATING A CONTROL  
SURFACE**

§ U.S. Patent No.: 7,040,210

§

§ Examiner: DAVID D. LE

§

§ Confirmation No.: 3998

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§ Art Unit: 3681

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REQUEST FOR CERTIFICATE OF CORRECTION

**Attention: CERTIFICATE OF CORRECTIONS BRANCH**

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Sir:

Applicant respectfully requests that a Certificate of Correction be issued in the captioned matter for the reason or reasons set forth below.

**CERTIFICATE OF TRANSMISSION UNDER 37 C.F.R. § 1.8(a)(1)(i)(C)**

Date of Transmission: 14 June 2007

I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office (USPTO) via the USPTO electronic filing system (EFS-Web) on the date shown above.

By: /darencdavis#38425/

Daren C. Davis

No fees are deemed to be necessary; however, the undersigned hereby authorizes the Commissioner to charge any fees which may be required, or credit any overpayments, to Deposit Account No. **502806**.

**Please link this application to Customer No. 38441 so that its status may be checked via the PAIR System.**

Consideration of Applicant's Request in view of the following remarks is respectfully requested.

## **REMARKS**

Applicant respectfully requests that a Certificate of Correction be issued to correct an error incurred through the fault of the U.S. Patent and Trademark Office in U.S. Patent 7,219,579 ("the '579 patent"). Specifically, as shown in Exhibit A, claim 10 of the '579 patent, in line 6, depends from claim 2. An Index of Claims, provided herewith as Exhibit B, indicates that claim 10 in the '579 patent corresponds to claim 4 in Application Serial No. 10/797,489 ("the '489 application"). Exhibit C, which is a page from Applicant's Response to Final Office Action of 27 July 2006 and Advisory Action of 29 September 2006 in the '489 application, shows that claim 4 in the '489 application depends from claim 2 in the '489 application. However, referring to Exhibit B, claim 2 in the '489 application corresponds to claim 8 in the '579 patent. Thus, claim 10 in the '579 application (*i.e.*, claim 4 in the '489 application) should properly depend from claim 8 in the '579 patent, not claim 2.

Accordingly, it is respectfully requested that a Certificate of Correction be issued to correct the above-described error in the '579 patent. A completed Certificate of Correction (PTO/SB/44) is provided herewith for certification.

## CONCLUSION

The Office is invited to contact the undersigned at (817) 578-8616 with any questions, comments, or suggestions relating to this matter.

Respectfully submitted,

14 June 2007  
Date

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**CUSTOMER NO. 38441**

**ATTORNEYS AND AGENTS FOR APPLICANT**

# Exhibit "A" to Request for Certificate of Correction, US 7219579

US 7,219,579 B2

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required, some embodiments of the present invention may utilize the blast tube 812 as the central tube 106 (shown in FIG. 1-FIG. 6).

This concludes the detailed description. The particular embodiments disclosed above are illustrative only, as the invention may be modified and practiced in different but equivalent manners apparent to those skilled in the art having the benefit of the teachings herein. Furthermore, no limitations are intended to the details of construction or design herein shown, other than as described in the claims below. It is therefore evident that the particular embodiments disclosed above may be altered or modified and all such variations are considered within the scope and spirit of the invention. Accordingly, the protection sought herein is as set forth in the claims below.

What is claimed is:

1. An apparatus for actuating a control surface, comprising:

- a first spur gear;
- a first drive assembly engaged with the first spur gear;
- a second spur gear;
- a second drive assembly engaged with the second spur gear; and
- a gear assembly mechanically capable of being coupled with the control surface and engaged with the spur gears, the gear assembly comprising:
  - a first screw;
  - a first gear engaged with the first spur gear;
  - a thrust nut mounted to the first gear and threadably engaged with the first screw;
  - a second gear engaged with the second spur gear;
  - a second screw mounted to the second gear and mechanically coupled with the thrust nut such that the second screw and the thrust nut rotate independently and translations of the thrust nut are transmitted to the second screw; and
  - a translation nut threadably engaged with the second screw and capable of being mechanically coupled with the control surface.

2. An apparatus, according to claim 1, wherein at least one of the drive assemblies further comprises:

- a motor;
- a speed reducer mounted to the motor and having an output shaft; and
- a drive gear mounted to the output shaft and engaged with one of the spur gears.

3. An apparatus, according to claim 1, wherein:

- the translation nut comprises a clevis; and
- the apparatus further comprises a linkage mechanically coupled with the clevis and capable of being coupled with a clevis of a control surface shaft.

4. An apparatus, according to claim 1, wherein the first screw is adapted for adjusting the gear assembly.

5. An apparatus, according to claim 1, wherein the first spur gear comprises a roll spur gear and the second spur gear comprises one of a pitch spur gear and a yaw spur gear.

6. An apparatus, according to claim 1, wherein:

- the translation nut comprises a clevis; and
- the apparatus further comprises a linkage mechanically coupled with the clevis and capable of being coupled with a clevis of a control surface shaft.

7. An apparatus, according to claim 1, further comprising an actuation controller coupled with the drive assemblies, such that actuation commands may be transmitted from the actuation controller to the drive assemblies.

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8. An apparatus, according to claim 1, further comprising a central tube and a bearing disposed between each of the spur gears and the central tube.

9. An apparatus, according to claim 8, wherein the central tube comprises a blast tube.

10. An apparatus, according to claim 2, further comprising a housing and a thrust bar mounted to the housing and to the central tube, such that one end of the gear assembly is mounted to the thrust bar.

11. An apparatus, according to claim 1, further comprising:

- a third spur gear;
- a third drive assembly engaged with the third spur gear; and
- a second gear assembly mechanically coupled with a second control surface and engaged with the first spur gear and the third spur gear.

12. An apparatus, according to claim 11, wherein the first spur gear is a roll spur gear, the second spur gear is a pitch spur gear, and the third spur gear is a yaw spur gear.

13. An apparatus, according to claim 11, further comprising an actuation controller coupled with the drive assemblies, such that actuation commands may be transmitted from the actuation controller to the drive assemblies.

14. A vehicle, comprising:

- a control surface; and
- an apparatus for actuating the control surface, comprising:
  - a first spur gear;
  - a first drive assembly engaged with the first spur gear;
  - a second spur gear;
  - a second drive assembly engaged with the second spur gear; and
  - a gear assembly mechanically coupled with the control surface and engaged with the spur gears, the gear assembly comprising:
    - a first screw;
    - a first gear engaged with the first spur gear;
    - a thrust nut mounted to the first gear and threadably engaged with the first screw;
    - a second gear engaged with the second spur gear;
    - a second screw mounted to the second gear and mechanically coupled with the thrust nut such that the second screw and the thrust nut rotate independently and translations of the thrust nut are transmitted to the second screw; and
    - a translation nut threadably engaged with the second screw and capable of being mechanically coupled with the control surface.

15. A vehicle, according to claim 14, wherein at least one of the drive assemblies further comprises:

- a motor
- a speed reducer mounted to the motor and having an output shaft; and
- a drive gear mounted to the output shaft and engaged with one of the spur gears.


16. A vehicle, according to claim 14, wherein:

- the translation nut comprises a first clevis;
- the control surface comprises a shaft including a second clevis; and
- the apparatus further comprises a linkage mechanically coupling first clevis and the second clevis.

17. A vehicle, according to claim 14, wherein the first screw is adapted for adjusting the gear assembly.

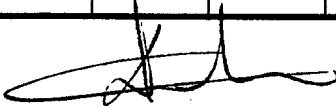

18. A vehicle, according to claim 14, wherein the first spur gear comprises a roll spur gear and the second spur gear comprises one of a pitch spur gear and a yaw spur gear.

# Exhibit "B" to Request for Certificate of Correction, US 7219579

<b>Issue Classification</b> 	Application/Control No.		Applicant(s)/Patent under Reexamination	
	10/797,489		TURNER, MARK A.	
	Examiner		Art Unit	
	David D. Le		3681	

ISSUE CLASSIFICATION									
ORIGINAL					CROSS REFERENCE(S)				
CLASS		SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)			
74		665N			74	640	665Q	665P	
INTERNATIONAL CLASSIFICATION					74	414	421A	424.71	
F	1	6	H	37/06	244	3.21	3.24		
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(Assistant Examiner) (Date)		 <b>David D. Le (11/13/06)</b> (Primary Examiner) (Date)	Total Claims Allowed: 27	
 (Legal Instruments Examiner) (Date)	11-14-06		O.G. Print Claim(s)	O.G. Print Fig.
			1	1

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant										<input type="checkbox"/> CPA										<input type="checkbox"/> T.D.										<input type="checkbox"/> R.1.47									
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***Exhibit "C" to Request for Certificate of Correction, US 7219579***

Claim 2 (Original): An apparatus, according to claim 1, further comprising a central tube and a bearing disposed between each of the spur gears and the central tube.

Claim 3 (Original): An apparatus, according to claim 2, wherein the central tube comprises a blast tube.

Claim 4 (Original): An apparatus, according to claim 2, further comprising a housing and a thrust bar mounted to the housing and to the central tube, such that one end of the gear assembly is mounted to the thrust bar.

Claim 5 (Original): An apparatus, according to claim 1, wherein at least one of the drive assemblies further comprises:

a motor;

a speed reducer mounted to the motor and having an output shaft; and

a drive gear mounted to the output shaft and engaged with one of the spur gears.

Claim 6 (Canceled).

Claim 7 (Previously Presented): An apparatus, according to claim 1, wherein:  
the translation nut comprises a clevis; and  
the apparatus further comprises a linkage mechanically coupled with the clevis and capable of being coupled with a clevis of a control surface shaft.

## UNITED STATES PATENT AND TRADEMARK OFFICE CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 7,219,579

APPLICATION NO.: 10/797,489

ISSUE DATE : 22 MAY 2007

INVENTOR(S) : MARK A. TURNER

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In column 8, line 6, cancel the text beginning with "10. An apparatus," to and ending with "thrust bar." in column 8, line 9, and insert the following claim:

10. An apparatus, according to claim 8, further comprising a housing and a thrust bar mounted to the housing and to the central tube, such that one end of the gear assembly is mounted to the thrust bar.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

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This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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